

## REMARKS

Claims 37 - 42 stand rejected under 35 U.S.C. 103(a) as unpatentable over Andrews, U.S. 4,097,993 in view of Wood et al, U.S. 5,863,360. Andrews discloses U-shaped or elliptical orthodontic arch wires having small, medium and large sizes for the upper (maxillary) and lower (mandibular) jaws. Values of Andrews' principle radii only appear of the same order of magnitude of radii claimed by applicants. The Examiner concludes that the exact size is an obvious matter of choice of a well known parameter to one of ordinary skill in the art "to best match the wire to the patient's size and needs."

Applicant respectfully traverses the Examiner's conclusions. Applicant's principle Claim 37, as currently amended, claims an arch wire of small, medium and large sizes wherein the medium size's principal curvature radius is derived from an ideal parameter for orthodontic treatment, with smaller and larger values dimensioned within one standard deviation plus and minus from the ideal dimension. As stated by Applicant in his specification at page 16, lines 3-6, "These parameters were determined based on the standard deviation of the average sum of a maxillary anterior tooth sizes of the patients with an untreated ideal occlusion used in the Bolton scientific study." As described and claimed in Applicant's parent application, now US 6,413,083, selection of the appropriate arch wire, i.e. whether a small, medium or large arch wire dimension, is subsequently determined by comparing the sum of the individual patient's maxillary teeth dimensions with the average untreated ideal values. The selected wire is that having the closest dimension to the individual patient's measurements.

From the universe of available data known to those skilled in the art, Applicant has selected a special group of historical patient data, that from W. A. Bolton's study, as establishing ideal orthodontic characteristics that provide a statistical basis for calculating and selecting arch wire geometry. The resulting sets of arch wires solve known difficulties in orthodontic treatment caused by over-sized or under-sized arch wires, such as "round tripping". Specification at page 4, lines 8-23.

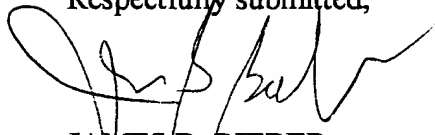
Andrews' focus is upon providing an advantageous "form" rather than "size". Andrews defines several radii for each arch wire to form an arch wire having a certain shape. While he recognizes that it is useful to provide small, medium and large sizes, he offers no particular or specific scientific basis for the selected dimensions. Applicant asserts that the dimensions selected by Andrews provide no assurances that they will likely achieve an ideal result, a different goal than simply trying to match an individual's jaw structure.

A key element of the invention is that an arch wire is sized to match the maxillary dimensions of a group of persons who, prior to treatment, have an ideal occlusion. The medium size is dimensioned to the average radius of this ideal group. Providing complimentary small and large size dimensions at plus or minus one standard deviation, means that an appropriate arch wire can be fitted to suit substantially all individuals. Having the basic medium size dimension related to the ideal occlusion improves treatment results over dimension based upon a broader more general population, as taught in the art.

The Examiner cites the Wood et al patent as teaching various arch wire cross-sectional shapes and materials, such as super-elastic metal. However, Wood et al does not teach anything of the arch wire sizes and radii of curvature claimed by Applicant, focusing only upon a wire surface treatment, principally a shot peening technique, to harden the surface of the material, said to reduce the coefficient of friction between the bracket and the arch wire. No significant teaching of arch wire geometry or what parameters are useful in establishing useful dimensions is provided by the reference.

Applicant submits that his application is allowable over the art cited by the Examiner.

Respectfully submitted,



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09/851,819	05/09/2001	David C. Hamilton	24300/277	3565

96646 7590 09/23/2003

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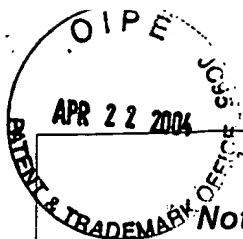
ART UNIT

PAPER NUMBER

3732

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



# Notice of Abandonment

Application No.

09/851,819

Examiner

John J. Wilson

Applicant(s)

HAMILTON, DAVID C.

Art Unit

3732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 24 January 2003.
  - (a) ☐ A reply was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply (including a total extension of time of \_\_\_\_\_ month(s)) which expired on \_\_\_\_\_.
  - (b) ☐ A proposed reply was received on \_\_\_\_\_, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
  - (c) ☐ A reply was received on \_\_\_\_\_ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
  - (d) ☒ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
  - (a) ☐ The issue fee and publication fee, if applicable, was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
  - (b) ☐ The submitted fee of \$\_\_\_\_\_ is insufficient. A balance of \$\_\_\_\_\_ is due.  
The issue fee required by 37 CFR 1.18 is \$\_\_\_\_\_. The publication fee, if required by 37 CFR 1.18(d), is \$\_\_\_\_\_.
  - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
  - (a) ☐ Proposed corrected drawings were received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply.
  - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on \_\_\_\_\_ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☐ The reason(s) below:

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.